

alti pappo subduplo brevioris phyllaria ovata ad oblongo-linearia obtusa vel rotundata ciliata; achenia dense hispidula; pappus albidus 6.5 mm. longus duplex, exteriore setuloso ca. 1.5 mm. longo.

"Lax scrambling shrub, 6 m. high;" stem (above) subterete, striatulate, 6 mm. thick, rather thinly arachnoid-tomentose, glabrescent, sordid-pilose or -pilosulous especially in inflorescence; leaves opposite; petioles slender, 1.3-3 cm. long, thinly arachnoid, glabrescent; blades of larger leaves 9-12 cm. long, 6-9.5 cm. wide, relatively thin, acute, at base broadly cuneate or rounded-cuneate, serrulate-denticulate above the mainly entire base with very slender teeth about 0.6 mm. long and 3-6 mm. apart, beneath compactly but not thickly dull-whitish-tomentose; panicles terminating stem and upper branches, together forming a loose pyramidal panicle about 28 cm. wide and 20-30 cm. long, thinly arachnoid and rather densely sordid-pilosulous with many-celled spreading hairs, the heads partly sessile, partly on pedicels up to 4 mm. long; involucre 4-5-seriate, strongly graduate, the 2-3 outer series of phyllaries ovate, somewhat fleshy, striate when dry, dull green, obtuse, ciliate and sparsely sordid-pilosulous, the 2 inner series linear-oblong, about 1 mm. wide, thinner, not striate, sordid-ciliate, erect; receptacle shallowly alveolate, the edges of the alveolae minutely hispidulous; corollas yellow, pilosulous on upper part of tube, 8 mm. long (tube slender-funneliform, 3.3 mm. long, throat thick-cylindric, 2 mm. long, teeth linear-triangular, 2.7 mm. long, hispidulous at apex); achenes (not truly mature ?) 1.3 mm. long; pappus yellowish-white, double, the outer setulose, about 1.5 mm. long, scarcely wider than the inner, the inner of hispidulous bristles bent at apex, 7 mm. long.

GUATEMALA: Tikal, Dept. Petén, 12-15 April 1931, *Bartlett* 12602 (type no. 1,540,627, U. S. Nat. Herb.)

A member of the group separated by Rydberg under the generic name *Sinclairia* Hook. & Arn., and related to *Liabum polyanthum* Klatt and ***Liabum brachypus*** (Rydb.) Blake.³ The former has a longer involucre (about 7-9 mm. high), nearly or quite equaling the pappus, and the inner phyllaries are strongly spreading or reflexed above at maturity. *Sinclairia pittieri* Rydb., the type of which I have studied, is not separable by any real character from *L. polyanthum*. *Liabum brachypus* lacks the sordid spreading hairs of the new species, and has a somewhat longer involucre (about 7 mm.) and a dense inflorescence. The specific name of the new species refers to the relative length of the involucre and the fruiting head.

³ *Sinclairia brachypus* Rydb. N. Amer. Fl. **34**: 299. 1927.

ZOOLOGY.—*Two new pocket mice from Arizona*.¹ E. A. GOLDMAN, Biological Survey.

When *Perognathus amplus* was described by Osgood in his revision of the genus (North Amer. Fauna, No. 18, p. 32, Sept. 20, 1900) the type was unique. Some subsequent efforts to obtain topotypes have been unsuccessful, owing perhaps to seasonal or cyclic variations in numbers. Over thirty specimens from various localities in the general region are, however, regarded as fairly representative. A series from

¹ Received June 16, 1932.

the low, open, desert region of southwestern Arizona presents the decidedly paler coloration characterizing some of the other mammals of that area. Specimens from northwestern Arizona, south of the Grand Canyon, also exhibit a departure from the typical form. The new geographic races are differentiated as follows:

***Perognathus amplus rotundus*, subsp. nov.**

Gila Pocket Mouse

Type.—From Wellton, Yuma County, Arizona. No. 250470, ♂ adult, U. S. National Museum (Biological Survey collection), collected by Bernard Bailey, November 9, 1931. Original No. A4353; X catalogue No. 27029.

Distribution.—Desert region of southwestern Arizona, and probably adjoining parts of Sonora.

General characters.—A large, light-colored subspecies, closely allied to *Perognathus amplus amplus*, of central Arizona, but ground color of upper parts a decidedly paler shade of pinkish buff, less obscured by black on face and along flanks; postauricular spots rather prominent; cranial characters also distinctive.

Color.—*Type*: Upper parts near pale pinkish buff (Ridgway, 1912), purest on upper surface of muzzle, sides of head, shoulders, flanks and outer surfaces of thighs, the top of head and back finely lined with black; under parts, forelimbs and hind feet white; ears pinkish buff externally, except anterior fold which is dusky, thinly clothed internally with blackish hairs, and distinctly edged with white at posterior base; small dusky areas at base of vibrissae on sides of muzzle (not continued in a narrow line across face as in typical *amplus*); tail thinly haired, slightly crested and tufted terminally, grayish above, whitish below, becoming dusky at tip.

Skull.—Very similar in general to that of *P. a. amplus*, but more robust; rostrum and nasals distinctly broader; mastoids broader anteriorly, bulging upward more prominently along outer border of parietal, but narrower, less inflated posteriorly; dentition about as in *amplus*.

Measurements.—*Type*: Total length, 170 mm.; tail vertebrae, 90; hind foot, 21. Average of five adult topotypes: 161 (155–165); 86 (82–95); 20.4 (20–21). *Skull* (type): Occipitonasal length, 24.2; greatest breadth (across audital bullae at meatus), 15.2; zygomatic breadth (posteriorly), 13.3; interorbital breadth, 5; length of nasals, 9.3; width of nasals (in front of incisors), 2.5; interparietal, 3.2 x 3.4; maxillary toothrow (alveoli), 3.6.

Remarks.—The pallid general coloration and most notably the lighter head of *Perognathus amplus rotundus* readily distinguishes it externally from *P. a. amplus*, and the skull differs markedly from that of the type of the latter. Intergradation may, however, be assumed.

Specimens examined.—Ten, all from the type locality.

***Perognathus amplus pergracilis*, subsp. nov.**

Hualpai Pocket Mouse

Type.—From Hackberry, Mohave County, Arizona (altitude 3500 feet). No. 227528, ♂ young adult, U. S. National Museum (Biological Survey collection), collected by E. A. Goldman, September 14, 1917. Original number 23304.

Distribution.—Desert region of northwestern Arizona, south of the Grand Canyon.

General characters.—Similar to *P. a. amplus*, but of more slender proportions; ground color of upper parts paler pinkish buff. Differing from *P. a. rotundus* in slenderness, and darker general tone of upper parts due to density of overlying black-tipped hairs, especially on head.

Color.—*Type*: Ground color of upper parts pale pinkish buff, purest along lateral line from cheeks to thighs, the head and back moderately and uniformly overlaid with black; under parts, forelimbs and hind feet white; ears pinkish buff externally, except anterior fold which is dusky, thinly clothed internally with blackish hairs; tail grayish or light brownish above, becoming darker toward tip, whitish below to small terminal tuft which is dusky all around.

Skull.—Similar to those of *P. a. amplus* and *P. a. rotundus*, but smaller and relatively narrower in greater dimensions; mastoids and audital bullae relatively smaller and much less inflated, the mastoids less rounded and produced posteriorly beyond plane of occiput; interorbital region actually as well as relatively broader.

Measurements.—*Type*: Total length, 143 mm.; tail vertebrae, 80; hind foot, 21. Average of three adults from Little Meadows (west of Kingman, Arizona): 154 (151–156); 86 (80–90); 21.5 (21–22). *Skull (type)*: Occipitonasal length, 22; greatest breadth (across audital bullae at meatus), 12.8; zygomatic breadth (posteriorly), 11.7; interorbital breadth, 5.4; length of nasals, 8.5; width of nasals (in front of incisors), 2.2; interparietal, 2.8 x 3.9; maxillary tooththrow (alveoli), 3.5.

Remarks.—*Perognathus amplus pergracilis* combines the pale buffy ground color of *P. a. rotundus* with the more obscured head and dorsum of *P. a. amplus*, due to overlying dusky hairs, and it differs notably from both in slenderer proportions.

Specimens examined.—Total number, 16, all from Arizona as follows: Beal Spring (2 miles from Kingman), 3; Big Sandy Creek, 1; Hackberry (type locality), 5; Little Meadows (west of Kingman), 3; Peach Springs, Hualpai Indian Reservation, 3; Signal, 1.

SCIENTIFIC NOTES AND NEWS

The honorary degree of doctor of science was conferred on Dr. D. J. McADAM, JR., of the Bureau of Standards at the commencement exercises of Washington and Jefferson College on June 4, 1932.

Obituary

Dr. LOUIS W. AUSTIN, international authority on radio transmission, and member of the staff of the Bureau of Standards, died in Washington on June 27 at the age of 64.

Dr. AUSTIN received the degree of doctor of philosophy at the University of Strasburg (Germany) in 1893. He served as professor of physics at the University of Wisconsin and at the Reichsanstalt in Berlin. In 1904 he came to the Bureau of Standards and began researches in wireless telegraphy. From 1908 to 1923 he served as head of the Naval Research Laboratory, returning to the Bureau of Standards in 1923.

Dr. AUSTIN was a member of the American Physical Society, Washington Academy of Sciences, Philosophical Society of Washington, American Institute of Radio Engineers and other scientific organizations. He received the medal of the American Institute of Radio Engineers in 1927.

Dr. AUSTIN's researches on radio transmission received wide recognition and he had only recently been elected to the presidency of the International Scientific Radio Union.